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**Task 1 - Energy auditing a computer system & recommend how sustainability can be integrated into an upgrade**



Instruction

• Gather information to prepare the installation of an energy measuring device on a computer system

• Prepare for the installation of the device

• Configure and test the device

• Complete and document installation and test results

• Evaluate opportunities to integrate sustainable ICT projects and reduce energy consumption

**Project Resources**

Current Cost EnviR Energy Monitor

Warning: Installation is simple yet if you are in Australia, for liability reasons it is required to be carried out by a qualified electrician when in in a power switchboard.

* <http://www.smartnow.com.au/installinstructions.php>
* <http://www.smartnow.com.au/current_cost_bridge.php>

**Theory**

Complete the following notes:

1. Q: Does the Current Cost EnviR Energy Monitor comply with Electrical Safety Standards?

ANSWER: Yes, It does.

1. Advise how you prepared the installation of Current Cost EnviR Energy Monitor

ANSWER:

A , Use the power supply fire wire pass through the sensor clamp

B, Plug in the sensor power supply and power on

C, Plug in the display unit power supply and power on.

1. Advise how you configured and tested the Current Cost EnviR Energy Monitor

ANSWER:

* Use the power supply fire wire pass through the sensor clamp
* Plug in the sensor power supply and power on
* Plug in the display unit power supply and power on.
* Connect the transmitter unit to computer and download the data.
* Analysis the data to generate the report.

1. Advise how you could document the installation and energy audit

(see <http://my.currentcost.com/>)

ANSWER:

* Record the data displayed on display unit when the device power off, power on, the highest value ,when we used word, excel, web browser, music and video.
* The device include destop, laptop, server and thinclient, webclient etc.

**Practicum**

* **Identify power consumption of a computer system under different operating conditions using the Current Cost EnviR Energy Monitor and appropriate power lead or similar energy meter.**
* **Recommendations on upgrading computer system.**

1. Record power consumption and notes e.g. range, variability, operating conditions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Condition** | **PC power consumption**  **(watts)** | | | |
| **DP** | **TC** | **WC** | **SV** |
| **OFF** | **17** | **0.3** | **0.27** | **19** |
| **MAX BOOT** | **51** | **3.5** | **5.1** | **42** |
| **IDLE** | **42** | **3.2** | **3.4** | **42** |
| **Wordprocessing** | **36** | **3.3** | **5.1** | **44** |
| **Spreadsheets** | **36** | **3.3** | **5.1** | **44** |
| **Web browsing**  <http://news.bbc.co.uk/2/hi/programmes/click_online/default.stm> | **45** |  | **4.6** |  |
| **Low level music**  <http://grooveshark.com/#/s/Fall+At+Your+Feet/3KIZB0?src=5> | **44** |  | **6.7** |  |
| **Low level video**  <http://www.joost.com/39w1yk49/#/?video_info=33p1yw1t> | **57** |  | **5.2** |  |

1. Evaluate the extent to which sustainability could be integrated into an upgrade of the computer system. Advise your recommendations:

* **Virtualization, such as VMware Ctrix, hyper-v**
* **Thin client, web client, Pad**
* **Smart UPS**
* **Smart Power supply**